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cover story

Language and the Brain

"Aphasia" is a general term applied to disorders of language resulting from damage to the brain. In one kind of aphasia the patients have difficulty saying small words like "is," "the," "if," and a most difficult phrase for them is "no ifs, ands, or buts." Studies of patients with aphasia have helped to elucidate the neural basis of verbal behavior, as described in the first digest in this issue.

mental health digest

The *Mental Health Digest* is a monthly publication designed to reflect the whole spectrum of mental health and to present a broad sampling of scientific subject matter and professional points of view. It contains condensations of material selected from the current mental health literature. The condensations are published with the approval of the authors and publishers for use in the *Mental Health Digest* only.

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The Organization of Language and the Brain

NORMAN GESCHWIND

Many problems relating to the functions of the nervous system can be studied in animals, which permits controlled experiments on large groups of subjects. But when we come to consider the relationship of the brain to language, our knowledge is based entirely on findings in man. Although I believe that forerunners of language do exist in lower forms, the direct contributions to this area of experimentation on the brains of animals lie in the future.

Brain Lesions in Man

Information in this area has come from several sources. Cases of brain tumor are of limited value, since tumors distort the brain and produce effects at a distance. Cases of penetrating brain wounds have been of use but are not the best source of anatomical data, since postmortem information is usually lacking. Stimulation during surgery has been another important source of information but, because of limitation of time at operation and the accessibility of only certain structures, has not covered the full range of phenomena observed clinically.

Studies of patients undergoing excision of cortical regions for epilepsy represent the largest corpus of truly experimental studies of the higher brain functions in man. They are limited, however, with respect to the range of phenomena. The Wada test, in which sodium amytal is injected into one carotid artery, has been a major source of knowledge concerning the lateralization of language functions in the brain.

Although important information has been obtained by these methods, the bulk of our knowledge has been derived from the study of adults in whom delimited areas of brain have been damaged as the result of occlusion of blood vessels, who have been studied over long periods, and whose brains have been subjected to postmortem examination.

Aphasic Disorders

The term *aphasia* is used to describe disorders of language resulting from damage to the brain. Early in the study of aphasia the distinction between language and speech was stressed. In disorders of speech the verbal output was impaired because of weakness or incoordination of the muscles of articulation. The criterion of a disorder of language was that the verbal output be linguistically incorrect. Similarly, in aphasic disorders of comprehension the patient might lose the ability to comprehend spoken or written language and yet show normal hearing or vision when tested nonverbally. These disorders could occur without impairment of other intellectual abilities. The aphasias were thus the first demonstrations that selective damage to the brain could affect one class of learned behavior while sparing other classes, and gave origin to the study of brain-behavior relationships.

Paul Broca in 1861 began the study of the relationship of aphasia to the brain, with two major contributions. He was the first to prove that aphasia was linked to specific lesions, and to show that these lesions were predominantly in the left half of the brain. The man who was most responsible for initiating the modern study of this field was Carl Wernicke, who in 1874

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published *The Symptom Complex of Aphasia.* Wernicke established the fact that there were linguistic differences between the aphasia produced by damage in the left temporal lobe, in what is now called Wernicke's area, and those produced by lesions in the frontal lobe in Broca's area.

Linguistic Changes in Aphasia

The aphasic of the Broca's type produces little speech, which is emitted slowly, with great effort, and with poor articulation. It is not only at the phonemic level that the speech of these patients is abnormal, since they fail to produce correct English sentences. Characteristically the small grammatical words and endings are omitted. These patients may show a surprising capacity to find single words. Asked about the weather, the patient might say, "Overcast." Urged to produce a sentence he may say, "Weather . . . overcast." These patients show a comparable disorder in written output, but they may comprehend spoken and written language normally. In contrast, the patient may retain his musical capacities. It is a common but dramatic finding to observe a patient who produces single substantive words with great effort and poor articulation and yet sings a melody correctly and even elegantly. Because Broca's area lies so close to the motor cortex, this latter region is often damaged simultaneously, so that these patients frequently suffer from paralysis of the right side of the body.

The Wernicke's aphasic contrasts with the Broca's type. The patient usually has no paralysis of the opposite side, which reflects the difference in the anatomical localization of his lesion. Speech output can be rapid and effortless, and in many cases the rate of production of words exceeds the normal. The output has the rhythm and melody of normal speech, but it is empty and conveys little or no information. There may be many errors in word usage, which are called paraphasias. These may take the form of the well-articulated replacement of single sounds, such as "spoot" for "spoon," or the replacement of one word for another, such as "fork" for "spoon."

The Wernicke's aphasic may, in writing, produce well-formed letters, but the output exhibits the same linguistic defects observed in the patient's speech. He shows a failure to understand both spoken and written language, although he suffers from no impairment of hearing or sight.

Wernicke's Theory

Wernicke's contribution also provides a theoretical analysis of the mechanisms of aphasia. He pointed out that Broca's area was located just in front of the cortical region in which lay the motor representation for the face, tongue, lips, palate, and vocal cords—that is, the organs of speech. It seemed reasonable to assume that Broca's area contained the rules by which heard language could be coded into articulatory form. This formulation still appears reasonable. Wernicke's area lies next to the cortical representation of hearing, and it was reasonable to assume that this area was somehow involved in the recognition of the patterns of spoken language.

Wernicke added the assumption that these two areas must be connected. Destruction of Wernicke's area would lead to failure to comprehend spoken language. Wernicke pointed out that, for most people, written language was learned by reference to the spoken form and that a lesion of this region would abolish comprehension of printed and written language. The

act of speaking would consist in arousing the auditory form of words, which would be relayed to Broca's area to be transduced into the complex programming of the speech organs, and therefore, with damage to Wernicke's area, language output would be disordered.

The model could readily be complicated further. The comprehension of written language would require connections from the visual to the speech regions, and destruction of these connections should cause isolated difficulties in reading comprehension. Since the language abilities were localized in the left hemisphere, language performances by the right hemisphere would depend on information transmission over the corpus callosum.

Wernicke's theory has been the only one in the history of aphasia which could be put to experimental test. It was possible, on the basis of the theory, to predict that certain lesions should produce syndromes not previously described. Furthermore, it was possible, on being confronted with previously undescribed syndromes, to predict the site of the anatomical lesion.

Several disorders of language fit into the Wernicke theory. In pure word deafness, the patient with intact hearing fails to comprehend spoken language although he has essentially normal ability to express himself verbally and in writing and to comprehend written language. The area of damage generally lies deep in the left temporal lobe, sparing Wernicke's area but destroying both the direct auditory pathway to the left hemisphere and the callosal connections from the opposite auditory region. Although elementary hearing is intact because the right auditory region is spared, there is no means for auditory stimulation to reach Wernicke's area, and therefore the patient does not understand spoken language.

In conduction aphasia, there is paraphasic speech, and writing, while comprehension of spoken and written language remains intact. Despite the good comprehension of spoken language there is a gross defect in repetition. The lesion for this disorder lies in the lower parietal lobe, and is so placed as to disconnect Wernicke's area from Broca's area. Because Broca's area is preserved, speech is fluent, but abnormal. The preservation of Wernicke's area insures normal comprehension, but the gross defect in repetition is the result of disruption of the connection between this region and Broca's area. The disorder in repetition exhibits some remarkable linguistic features which are not yet explained. The disorder is greatest for small grammatical words; a patient who may successfully repeat "big dog" or even "presidential succession" may fail on "He is here." The most difficult phrase is "No ifs, ands, or buts." In many patients the ability to repeat numbers may be preserved best of all, so that, given a phrase such as "seventy-five percent," the patient may repeat "seventy-five" effortlessly but fail on "percent."

Pure Alexia without Agraphia

Many examples of pure alexia without agraphia were described in the 1880's, but the first postmortem study of this syndrome was described in 1892. The patient suddenly developed a right visual field defect and lost the ability to read. He could, however, copy words that he could not understand. He was able to write spontaneously, although he could not read later the sentences he had written. All other aspects of his use and comprehension of language were normal. At postmortem it was found that the left

visual cortex had been destroyed. In addition, the posterior portion of the corpus callosum was destroyed, the part of this structure which connects the visual regions of the two hemispheres. Because of the destruction of the left visual cortex, written language could reach only the right hemisphere. In order to be dealt with as language it had to be transmitted to the speech regions in the left hemisphere, but the portion of the corpus callosum necessary for this was destroyed. Thus, written language, although seen clearly, was without meaning. This was the first demonstration of the effects of a lesion of the corpus callosum in preventing transfer of information between the hemispheres.

Isolation of the Speech Area

Another syndrome, called "isolation of the speech area," is explained by the Wernicke theory. We studied a patient for nearly 9 years after carbon monoxide poisoning. She showed no evidence of language comprehension in the ordinary sense, and never uttered a sentence of propositional speech. She was totally helpless and required complete nursing care. In contrast were her language performances in certain areas. She would repeat perfectly sentences said to her. She would, however, go beyond repetition. If the examiner said, "Roses are red," she would say, "violets are blue, sugar is sweet, and so are you." More surprising, it was found that she was capable of verbal learning. Songs which did not exist before her illness were played to her several times. Eventually, when the record player was started she would begin to sing. If the record player was turned off she would continue singing the words and music correctly. Postmortem examination showed a remarkable lesion, which was essentially symmetrical. The classical speech area, including Wernicke's area, Broca's area, and the connections between them, was intact, as were the auditory inflow pathways and the motor outflow pathways for the speech organs. In the regions surrounding the speech area either the cortex or the underlying white matter was destroyed. The speech area was indeed isolated. The patient's failure to comprehend presumably resulted from the fact that the language inputs could arouse no associations elsewhere in the brain, and since information from other portions of the brain could not reach the speech areas, there was no propositional speech. On the other hand, the intactness of the speech region and its internal connections insured correct repetition. The preservation of verbal learning is particularly interesting. In addition to the speech area, the hippocampal region, which is involved in learning, was also preserved, and this probably accounts for her ability to carry on the memorizing of verbal material.

Callosal Syndromes

Pure alexia without agraphia was the first syndrome in which damage to the corpus callosum was shown to play a role by interrupting transfer of information between the hemispheres. I will mention briefly a few aspects of a patient's condition which fit into the Wernicke theory. When writing with the right hand the patient produced linguistically correct words and sentences and carried out calculations correctly. When writing with the left hand he produced incorrect words (for example, "run" for "go") and performed calculations incorrectly. The theory outlined above implies that, for writing to be carried out correctly with the left hand, the information must be transmitted from the speech areas across the corpus cal-

losum, whose interruption in this patient explained his failures. Similarly, the patient could correctly name objects (concealed from vision) which he palpated with the right hand, but he would misname objects palpated with the left hand, although it could be shown by nonverbal means that his right hemisphere recognized the object. If a pencil was placed in his left hand the patient could draw the object previously held in that hand. Again, the Wernicke theory implies that, for an individual to correctly name an object held in the left hand, the information must be transmitted from the sensory regions in the right hemisphere to the speech regions via the corpus callosum, which had been destroyed in this patient. The patient could read in the left as well as the right visual field. This led us to conclude that the destruction of the corpus callosum had spared the posterior end, a prediction confirmed at postmortem.

Cerebral Dominance

One remarkable feature of man is cerebral dominance—the fact that in the adult the capacities for speech are overwhelmingly controlled by the left hemisphere. Out of 100 adult aphasics, at least 96 percent have damage to the left side of the brain. We do not know of any example in any other mammal of a class of learning which is predominantly controlled by one half of the brain. What underlies human speech dominance? It is widely stated that the human brain is symmetrical, and this had led either to the assumption that speech dominance must reflect some subtle physiological difference between the hemispheres, or even to the assumption that speech dominance is somehow acquired as the result of postnatal experience. We reinvestigated this problem, particularly since we found that some authors had claimed that there were anatomical differences between the hemispheres. We demonstrated that such differences exist and are visible to the naked eye. The area behind the primary auditory cortex in the upper surface of the temporal lobe is larger on the left side in 65 percent of brains, and larger on the right in only 11 percent. This region is a portion of Wernicke's area. It is reasonable to assume that there are other anatomical asymmetries in the hemispheres of the human brain, reflecting other aspects of dominance.

Not only have Wernicke's localizations stood up under examination but his theory has been the only one which has permitted the prediction of new phenomena, or has been able to account for new observations. Several remarkable disorders, such as isolated disturbances of reading and the symptomatology of the corpus callosum, are examples of the explanatory power of this theory.

Financing the Care of the Mentally Ill Under Medicare and Medicaid

DOROTHY P. RICE, RUTH I. KNEE, and MARGARET CONWELL

Inclusion of psychiatric benefits in the Social Security Amendments of 1965 represents a significant precedent in financing care of the mentally ill. The two programs—Medicare and Medicaid—removed the barriers to quality medical care for the aged and poor whose health care needs were greatest. Although mental health care services were not emphasized, the mental health benefits and special limitations in the law have brought into focus the issues and problems relating to the provision of more adequate mental health services for the entire country.

The special limitations reflect the concern of Congress with the fiscal and policy implications of covering the long-term custodial care commonly associated with the mental hospital. Representatives from public programs and private groups testified before the Senate Finance Committee with respect to the limitations on coverage of care of the mentally ill under Medicare and Medicaid. The Committee requested the Secretary of Health, Education, and Welfare to study the experience under the 1965 Amendments to the Social Security Act and to make recommendations for changes in a report to the committee.

An ad hoc task force has been engaged in a study of the use of covered services by psychiatric patients under Medicare and Medicaid. This paper summarizes the present coverage of psychiatric benefits under Medicare and Medicaid and presents the findings of the task force relating to experience under these two programs and the overall status of mental health activities in the nation.

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Psychiatric Benefit Limitations

Hospital insurance program-Title XVIII, Part A—There are no special limitations for psychiatric treatment in general hospitals. Coverage of inpatient services in a psychiatric hospital is limited to 190 days during a person's lifetime. The lifetime reimbursement restriction to 190 days is subject to the benefit period provision applicable to all hospital care under the Medicare program. A benefit period begins on the first day a person becomes an inpatient and ends when the person has not been in any hospital or extended care facility for 60 consecutive days. A Medicare beneficiary can use up to 90 days of hospital care benefits and 100 days of posthospital extended care benefits in each benefit period. He also has a lifetime reserve of 60 days which he may use in a benefit period should he exhaust his 90 days of coverage.

In the case of mental illness, the application of the benefit period provision means that the 190 days cannot be used consecutively. A beneficiary who enters a psychiatric hospital for the first time and begins a new benefit period would be reimbursed under Medicare for a maximum of 150 days (90 plus 60 lifetime reserve days). To obtain reimbursement for the remaining 40 days, he would have to leave for 60 consecutive days, when a new benefit period would begin.

Medical insurance program-Title XVIII, Part B—Under the medical

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insurance program, a person aged 65 and over may enroll for benefits by paying a monthly premium. The program pays 80 percent of the reasonable charges for covered physicians' services after a $50 deductible in each calendar year. In the medical care of mental illness, there is a limitation on the amount Medicare will pay for physicians' services when the beneficiary is an "outpatient." Reimbursement cannot exceed 50 percent of the charges for such treatment, or $250 in each calendar year, whichever is less. This limitation does not apply when the physician renders medical or psychiatric care to a mentally ill beneficiary when he is an inpatient of a hospital or a nursing home.

Medicaid-Title XIX—Federal sharing is available for the cost of most types of care for the mentally ill because Title XIX prohibits elimination of patients from the program on the basis of diagnosis. The principal statutory exclusions are: (1) Inpatient hospital services in institutions for mental diseases for all persons *under* age 65; (2) Skilled nursing home services in an institution for mental diseases for all persons *under* age 65.

Federal financial participation is available for a number of services in the treatment of the mentally ill, including inpatient hospitalization in a general hospital, outpatient services, day care treatment in clinics or community mental health centers, evaluation and treatment by psychiatrists, and skilled nursing home services.

The Medicaid legislation included the "Long Amendment" which has special implications for the treatment of the aged mentally ill. These provisions made it possible for medical assistance or medical vendor payments to be made in behalf of elderly patients in mental institutions. The addition of these provisions meant that medical assistance payments could become a major resource for the payment of care of elderly patients in mental hospitals. For the first time, the elderly patients would receive direct assistance payments while they are in a mental institution. These mental health provisions may also be adopted under Title I or Title XVI of the Social Security Act. Thus, if a State has postponed its adoption of Title XIX until the 1970 deadline, it could elect to pay for care of patients ages 65 and over through its Old Age Assistance and Medical Assistance Programs.

To receive Federal participation for payment for care of patients aged 65 and over in psychiatric hospitals, States must agree to adopt special provisions: a joint working agreement, special staff, evidence of the maintenance of State effort in the funding and development of mental health services, periodic evaluation of each patient, and provision of alternatives to inpatient hospital care.

Although the final report of the Department of Health, Education, and Welfare to the Senate Finance Committee is not yet ready, several findings are available.

Medicare

Increased use of general hospitals by psychiatric patients aged 65 and over—In order to determine Medicare's impact on the use of general hospitals by aged psychiatric patients, the Social Security Administration contracted with the Commission on Professional and Hospital Activities (PAS) to obtain data on hospital discharges with a primary psychiatric diagnosis. Although the distribution of PAS hospitals is not representative of the nation's hospitals, the data provide information for the same hospitals be-

fore and after the initiation of Medicare.

In the 18 months before Medicare, aged psychiatric discharges comprised about one-tenth of all psychiatric discharges and 13.5 percent of their total days of care; these proportions rose to 12.3 percent and 18.1 percent, respectively, in the 18 months following Medicare's initiation. The number of aged psychiatric discharges increased nearly 29 percent within these two periods. The under-age-65 discharges increased only 1.2 percent, and for two age groups (under age 15 and age 45–64) a decrease was registered. The average length of stay for aged psychiatric discharges rose from 16.2 to 18.7 days, bringing the increase in their total days of care up 49 percent. For the under-age-65 group, the increase in days of care was only about one-tenth that of the aged.

A shift to public financing of aged psychiatric patients in general hospitals—The greatest impact of Medicare was in source of payment. The PAS study showed that for the 18-month period before Medicare, about 60 percent of the discharges and days of care was paid for by insurance—43 percent by Blue Cross and 17 percent by commercial insurance. More than one-fifth of the days of care were paid for out-of-pocket. In the 18-month period after Medicare, the out-of-pocket portion was reduced to 3 percent, the insurance portion to 6 percent, and Medicare and Medicaid became the source of payment for 90 percent of the discharges and 89 percent of the days of care.

Psychiatric patients constitute a very small proportion of total general hospital population—Two sets of data support this finding. The PAS data showed that in the 18 months before Medicare, psychiatric patients comprised 1.9 percent of all PAS discharges and 2.9 percent of the total days of care. The comparable proportions after Medicare were higher, but still only 2.0 percent and 3.1 percent, respectively. Thus, even a large change in their utilization of general hospitals would probably have relatively little impact on total utilization.

The Social Security Administration has preliminary data on short-stay general hospital discharges for the first 6 months of Medicare. These data are reported by diagnosis and indicate the extent of use of short-stay hospitals by aged psychiatric patients during the first 6 months of Medicare. A total of 2.3 million discharges aged 65 and over from short-stay hospitals were reported during the first 6 months of the Medicare program. Of this total, 1.4 percent had a primary psychiatric diagnosis. Days of care for these psychiatric discharges amounted to 1.6 percent of the total days of care. Average length of stay was longer for psychiatric discharges. On an annual basis, for every 1,000 Medicare enrollees, there were three psychiatric discharges, representing 51 days of care.

A substantial portion of mental hospitals are participating in the Medicare program—About 69 percent of all mental hospitals were participating in the Medicare program as of July 1967. The fullest participation was in the Western States and the least in the South. A somewhat larger proportion of public than private mental hospitals were participating. About 323,000 adult beds were available in the 331 mental hospitals participating in the Medicare program as of July, 1967. Adult beds comprised 74 percent of the total number of beds in these hospitals. The ratio of adult beds to total beds in public and private mental hospitals was much the same in each instance. Regionally, the ratio ranged

from 58 percent in the North Central States to 92 percent in the West.

Annual Medicare payments to psychiatric hospitals amounted to about $25 million in 1968—Data are available from Medicare claims approved for payment and recorded in the Social Security records to indicate the extent of Medicare reimbursements under the program. On an annual basis, there were 46,931 claims with 1.9 million days of care or an average 40 days per claim. Total charges were $32.4 million, averaging $690 per claim or $17 per day. Of this total, $23.8 million, or 73.3 percent, represented the amount reimbursed. For all hospitals, including short-term general, long-term general, and TB hospitals, as well as psychiatric, total claims for 1968 numbered 5.8 million representing 77.2 million days of care and $3.4 billion in reimbursements. In terms of total hospital use, psychiatric hospital use represents only 0.8 percent of all claims, 2.4 percent of the covered days of care, and 0.7 percent of the total amount reimbursed.

Elimination of 190-day limit is recommended by the Health Insurance Benefits Advisory Council—In its annual report on Medicare, the Health Insurance Benefits Advisory Council (HIBAC) felt that the 190-day limit on care in psychiatric hospitals "is not an appropriate means of safe-guarding the program against payment for what is, in effect, custodial care." Long-term hospital care does not necessarily mean the patient is receiving custodial care; medical care is often provided in a psychiatric hospital. Also, where patients receive medical treatment in a separately certified general medical and surgical unit, these days are not counted against their 190-day limit, while patients receiving the same treatment in a psychiatric hospital with no such unit must count these days against their limit.

Free-standing community mental health centers have certification and reimbursement problems under Medicare—Community mental health centers are being developed throughout the country. Those that receive Federal financing must provide inpatient treatment, outpatient treatment, partial hospitalization, emergency services, and consultation and educational services.

Mental health centers that are affiliated with general hospitals are certified under Medicare as part of the general hospital; centers that are affiliated with a psychiatric hospital are certified as a part of that hospital. A number of new centers have developed independently and are "free standing." To qualify as a Medicare provider of service, present law requires that the "free-standing" mental health centers meet the Condition of Participation for Psychiatric Hospitals. This means that inpatient care is subject to the 190-day limitation. Because it is a different type of facility, it is difficult for the "free-standing" mental health center to become certified as a psychiatric hospital.

Outpatient services provided by a physician are subject to the $250 annual limitation. It is possible for centers to provide day care and outpatient treatment by nonphysicians as "incident to a physician service." However, billing may be cumbersome under the present limitation. There is also a problem of payment if the physician is not a member of the mental health center staff.

In its annual report on Medicare, the HIBAC recommended "the enactment of legislation which would allow the participation of community mental health centers in the Medicare program."

Medicaid

Medical assistance payments have become a major resource for payment of care of elderly patients in mental hospitals—As of October 1, 1969, 35 States had adopted the mental health provisions of Medicaid. As of June 30, 1968, almost three-fifths of the 120,000 patients aged 65 and over in mental institutions were covered under the Long Amendment in the 28 States that were then participating. The total cost in these 28 States is estimated at $200 million a year, with the Federal share estimated at $134 million.

There is considerable variation among the States in implementation of benefits for aged mentally ill—The percentage of elderly population included in the program varies widely from State to State. Many problems in implementation of the mental health provisions of the Medicaid program are those inherent in any program that requires collaboration between staffs of several organizations, without opportunity for planning or for understanding of goals, functions, requirements, and benefits. Many hospital superintendents, administrators, nursing directors, social workers, and other personnel have complained about the vast amounts of paper work with no additional staff. In some States, vendor payments to mental hospitals are returned to the mental health program to pay for improvements and for additional staff within the hospital as well as in community mental health programs. In other States, this money has gone to the general treasury. Several States are in the process of obtaining legislation to make it possible for reimbursements to be returned to the mental health program.

Improvement is needed in the documentation of services provided and payments made—A few States have initiated systems which enable them to have an accurate picture of the number of patients in the program, type of care provided, status of the periodic reviews, and reimbursement collected. However, there are no consistent data collection system or data requirements. Standards and procedures at the institutional level have not been the same as those required for the Medicare program. The initial and periodic evaluations of the patient's medical, social, and psychiatric status are not the same as the treatment plan and the utilization review required under Title XVIII, and in many facilities these have been unrelated. Billing for Federal reimbursement for the care given to the patient has not been related to the documentation of the actual care received by the patient. Recent regulations require States to submit annual progress reports and maintenance of efforts reports and it is hoped that these documents will assist in ongoing evaluation.

Continued decrease in mental hospital resident population aged 65 and over—Data for 1966 and 1967 on resident population and first admissions aged 65 and over in State and county hospitals indicate a decrease in utilization of these facilities. The extent to which medical assistance payments have influenced this decrease is not known.

Limited availability of comprehensive mental health services in some States—Title XIX provides Federal financial participation for most forms of psychiatric services for all ages except the specific statutory exclusion of payment for care for patients under the age of 65 in mental hospitals. The mandatory services required under Title XIX can cover a range of services for the psychiatric patient. However, administrative controls may cir-

cumscribe their availability. Although States are not supposed to exclude by diagnosis, they may limit the amount of services that are provided.

States may in practice limit psychiatric care even more than exists in their Title XIX plan. For example, States are expected to publicize eligibility requirements and Title XIX services available, but some States have limited such publicity. With the exception of two or three large States, the utilization of the Medicaid program for community mental health services has been minimal.

There are no data that reflect the complete picture of the utilization of Title XIX funds for community mental health services. The potential for coverage of services is illustrated by Kentucky which has negotiated an agreement to provide for Medicaid payments for all eligible persons. This accounts for between 5 and 60 percent of the income of the individual community mental health centers in the State.

Standards for psychiatric hospitals vary considerably among the States—The initial regulations for the mental health provisions required a level of standards for psychiatric hospitals which included an institution "approved by appropriate standard setting authorities as the hospital established for the care of the mentally ill and being physically safe and as having staff adequate in numbers and qualifications to carry out an active program of diagnostic treatment and rehabilitative services for its patients as specifically provides psychiatric supervision, medical services, including 24-hour nursing services under the supervision of a registered nurse, and the social services necessary to assure a continuous plan of treatment and care for all of its patients." Although these requirements were similar to those for hospitals under Medicare, there has been no mechanism for enforcing them. All hospitals that were part of a State mental health system were used for the care of elderly patients even though the hospital might not meet the standards.

Current regulations require States participating in the program to have their hospitals certified for Title XVIII by July 1, 1970. If the hospital has a distinct part certification, the patients receiving Title XIX reimbursement must be housed in that part. Compliance may require change in the organization of services for the elderly within mental hospitals. A number of hospitals probably will not meet the certification requirements under Title XVIII and may attempt to create a distinct part acute hospital and a large continued care "skilled nursing home."

National Trends

Decline in the use of public mental hospitals as the sole resource for the care of the mentally ill—In 1946 there were about 586,000 beds for the care of the mentally ill. About 80 percent were located in State and county hospitals; the remaining in private psychiatric hospitals. At that time, they constituted 42 percent of all the hospital beds in the United States. There were 315 public hospitals, 265 private hospitals, 109 general hospitals with psychiatric units, and 524 outpatient psychiatric clinics. By 1967, the number of psychiatric facilities had increased to over 4,000, including 1,316 general hospitals with psychiatric services and 2,213 outpatient psychiatric clinics. In addition, there were over 500 partial hospitalization services, mostly day hospitals.

During the period 1955–1967, the total number of individuals treated increased 80 percent, from 1.6 million to

2.9 million patients. The increases occurred in patients treated in general hospitals, where the number more than doubled, and in clinics where the number of patients almost tripled. In 1955, there were more than twice the number of patients under care in mental hospitals compared with those treated in clinics. By 1967, the ratio was reversed.

More widespread acceptance of the insurability of persons with mental disorders—The increase in the types of facilities and therapies was paralleled by the development of sources of payment for services and the improvement and development of insurance programs. In 1965, of 49 million persons with coverage under Blue Cross plans, 79 percent had coverage for nervous and mental disorders. In 1951, 30 of the 76 plans most widely held excluded hospital coverage for persons with nervous and mental conditions, 32 had limited benefits, and 14 had full benefits. By 1966, only three plans had such exclusions, 50 provided limited benefits and 22 full benefits. Under a new Blue Cross policy all plans with high option benefits must include benefits for mental or nervous disorders. In 1966, of the 45 million members covered by Blue Shield for physicians' services, 26 million had out-of-hospital benefits that covered psychological testing, prescription drugs, and psychiatric social work services. Similar advances have taken place in the coverage by commercial insurance companies.

The scope of insurance coverage for mental illness needs to be broadened—Although there have been improvements in the scope of benefits for the mentally ill under private health insurance plans, there was—in the 1965 legislation and the amendments of 1967—a tendency to consider mental illness as different from other illnesses.

Current therapeutic concepts and practices stress the importance of a variety of treatment modalities that should be available as inpatient and outpatient services for persons with mental illness. Emphasis is placed upon short periods of inpatient treatment combined with maximum utilization of community living and outpatient treatment for both the acutely ill person and the chronically ill person. Older persons with mental illness may need several periods of hospitalization but should be able to spend the remainder of time at home or in an alternative care facility. Because of the multidisabilities that are common to the aged mentally ill, the patient may need medical and/or surgical treatment concurrently with or prior to psychiatric treatment. This combination of treatment may be provided in a general hospital that has specialized treatment services or in a psychiatric hospital. The Medicare program contains built-in limitations which may restrict the patterns of care and the availability of services for the psychiatrically ill person. Such limitations are not imposed on persons with other illnesses.

The Caregiving System in Community Mental Health Programs: An Application of Open-Systems Theory

HERBERT C. SCHULBERG and FRANK BAKER

Prominent among the problems of developing a comprehensive community mental health program is that of how to conceptualize, organize, and operate a system capable of providing the Federally prescribed essential elements — inpatient, outpatient, and emergency services, partial hospitalization, and consultation and education. Organizing these elements into a comprehensive system presents the most formidable issue now facing us.

In many communities it will not be feasible, or wise, for a single facility to provide the full spectrum of services. It will become necessary for a combination of existing and new agencies to coordinate their programs in such a way that a complete range of services is provided. In spite of the consensus about the necessity for mental health facilities to collaborate with other community resources, there is controversy about the optimal nature of such relationships. The contrasting viewpoint can be categorized in an oversimplified manner as the medical practice model and the human services model.

In the medical practice model the mental health center, under medical leadership, assumes responsibility and perhaps supervision of the community's mental health services. Mental health centers interact with their communities by providing specific services to other components of the health and welfare caregiving network. Consultation programs with such agencies as the local school, court, and police department are established, and the mental health professional assists when requested to do so.

Attention is being given to the human services model as an alternative arrangement. Mental health is viewed as a subsidiary area within the broad field of health, education, and social welfare. Numerous community agencies function as mental health caregivers, and the mental health of a community is affected by the organization and rules of procedure of these agencies. It is a challenge to consider the contribution of these resources within a mental health program, not merely as targets of consultation and education, but as components of mental health planning and services.

The structural pattern and network of liaisons in the evolving human services model are such that the mental health center is designated as just one of a variety of community resources. This model is particularly evident in rural areas and in those instances where mental health programs have assumed a strong social action component. Two-way interaction becomes routinized and the concept of feedback patterns leading to mutual adjustments is institutionalized. The mental health facility and other agencies jointly work with the same troubled family, cooperate in the development of new programs, and try to minimize competition with each other. This pattern could become the optimal one for providing comprehensive mental health services to a total population.

This paper applies open-systems theory to a model of the community mental health caregiving system that

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may be defined as a set of community agencies related in a causal network, so that the actions of one component affect the capabilities of others in meeting community mental health needs.

In conceptualizing a community mental health system our focus shifts from the level of the single organizational system to that of a complex network of interrelated organizations. From the general systems perspective, it is appropriate to apply the neutral terms of open-systems theory in making intersystem generalizations so long as we recognize that a molar system may have different characteristics from a molecular one. Larger and more differentiated interorganizational systems are likely to be marked by more complicated, divergent, and conflicting roles and relationships than are found within a single organizational system.

Primary Task

In order to comprehend the activities and relationships in a caregiving system it is necessary to consider the network's directed movement toward some goal in relation to its community. The caregiving system in a community mental health program has multiple goals and performs many tasks simultaneously. The concept of "primary task" distinguishes among the varied goals of an organization. In addition to providing the patient-oriented essential elements of a comprehensive program, the mental health system engages in research, educational programs for mental health disciplines, social action programs, providing employment for professional and nonprofessional personnel, striving to preserve itself, and so on. Multiple goals are not necessarily compatible and they may produce competition for scarce resources among those subparts of the organization that are more committed to one goal than others. Ambiguities arise in defining the primary mission or task because certain goals are denied, and the public goals that the organization claims to pursue will fail to be realized because they were never meant to be realized.

There usually is no priority of goals within the mental health caregiving system and any goal may assume primacy according to the balance of forces then operating. Priorities are modified as the result of personnel changes, the gain or loss of Federal grants, changing techniques and ideologies, and so on, so that any primary task may only have a limited viability. The program director is faced with the consequent problem of organizing a stable caregiving system within an everchanging framework of tasks.

How is the mental health center affected by changing primary tasks under the medical practice model and the human services model? Although the center is susceptible to the vagaries of external modifying forces in either model, the medical practice model provides greater control over its goals and objectives. It can exercise greater influence on the priorities assigned to primary, secondary, and tertiary prevention (usually the latter two), and through allocation of resources control working relationships. It also incurs the risk of imposing a task priority upon the caregiving system that does not necessarily meet the wishes of other resources or the community's actual needs.

The human services model offers the mental health center less control over its task selection. The center is concerned with and required to establish priorities that are compatible with its internal desires as well as the demands of its environment. The community may see violence control or

poor housing as issues of immediate concern and exert pressure on the caregiving system to deal with problems that have not been of concern to mental health organizations. The internal and external frames of reference can be in opposition so that the mental health center must exercise adroitness and flexibility in coping with potentially contradictory pressures.

The Environment

An open system is one into which there is a regular flow of resources from the environment and a continuous outflow from the system back to the environment. In contrast to traditional mental health programs whose functions and patterns resemble a closed system, the community mental health caregiving network depends upon its exchanges with the environment and may be considered an open system.

Understanding the environment in which it is operating is essential for a community mental health program not simply in theoretical terms but because of practical implications. A decision to include or exclude segments of the environment from its range of concern or interaction will affect such inputs as people, values, economic resources, physical facilities, and technology.

Although the environment is of central importance to the medical practice model and human services model, significant distinctions are evident in the manner in which they designate their input and output constituencies. In a general sense the medical practice model has defined a more limited and more familiar constituency as being relevant since its tasks focus more upon secondary and tertiary prevention. More elements of the community are now perceived as significant for the successful completion of these tasks, but expansion of the input and output environment has been limited.

By contrast, the program employing the human services model has witnessed a major expansion of the environmental constituency to which it is sensitive and with which it interacts. The mental health center is becoming increasingly involved with problems of primary prevention and accepting inputs which go far beyond previous definitions of appropriate endeavor. The outputs have been similarly affected so that it may be as relevant to help a patient receive a higher welfare check as it is to reduce paranoid ideation.

In general, the consumers are becoming restless and we are witnessing a growing concern about the formal caregiving network's adequacy and relevance of performance. Pressure is being directed toward the mental health system to reorganize its structure and to realign its priorities. Administrative flexibility and new technical competencies will be required to meet those changing environmental demands. At the same time, no system can be completely "open" and survive as an integrated functioning network, so that counterpressures will develop within the system for boundary control and limitation of service. Effective performance will be difficult to achieve without a special community subsystem having the responsibility and authority to guide the overall system. The past inability of government to perform this function has resulted in a proliferation of competing and overlapping programs in the same geographic area. We must hope that emerging local coordinating and planning mechanisms will permit improved feedback control of the community mental health system.

Subsystems of the Caregiving Network

Analysis of the input and output activities of the open system community mental health program must be supplemented by an examination of the internal interaction patterns among the program's components. Not all agencies in the network participate in every task so that the totality of those facilities that carry out a particular function can be designated as a subsystem. Planning, coordination, and evaluation are dependent upon the identification of subsystems and their membership.

The conceptual basis for the total program—The alternatives range from the traditional medical model of etiology in which illness is intraorganismic and occurs in individuals, to the social psychiatric model in which illness is understood as a disequilibrium in the interaction between a social unit and its environment. At the former extreme, treatment will consist of organic modalities or individual psychotherapy and the treatment subsystems will be composed of medically oriented resources. The social psychiatric model alters traditional patterns of etiology, diagnosis, and treatment. Emphasizing a concern with noxious stimuli in the environment, the knowledge and skills of the mental health professional are extended to the point where program subsystems may include many community elements rarely associated with mental health endeavors.

The type of psychiatric facility being utilized—The psychiatric component of the total program in most instances will be a State mental hospital, an expanded child guidance clinic, a teaching hospital-medical school center, or the psychiatric unit of a general hospital. The services provided within the psychiatric facility will affect the extent to which it participates with other agencies in organizing effective subsystems. A large teaching hospital, which provides the five services in a comprehensive program, will feel less need to organize extended caregiving subsystems than the expanded child guidance clinic which is dependent upon an inpatient facility's participation.

The richness of community resources—The assumption that nonpsychiatric resources desire to participate in a comprehensive program is more valid in urban than rural communities since in the latter we find few resources customarily identified as part of a mental health subsystem. The dearth of rural mental health resources has led to development of unique caregiving subsystems whose composition and operating patterns differ from those found in urban areas. Service gaps in metropolitan caregiving subsystems frequently stem from failure to coordinate existing facilities rather than from an absence of needed resources.

Patterns of subsystem interaction—One significant constraint imposed upon subsystems is the difficulty of arranging appropriate interactional patterns. Problems of agency domain, institutional inertia, and professional specialization are some of the forces that have preserved impermeable boundary lines and forestalled effective cooperation. And yet the effectiveness of a program is dependent upon its ability to function as an open system with maximum interaction.

Not all participants in a community mental health system openly recognize their interdependence with other facilities. The resurgent emphasis on coordination among agencies so as to permit continuity of care highlights the importance of conscious awareness by agency personnel of the systemic character of the community mental health network.

Sociolinguistic Alternatives in Teaching Reading to Nonstandard Speakers

WALT WOLFRAM

The lagging reading level of lower-class minority groups, particularly blacks, has become a matter of national concern. Many approaches have been suggested to neutralize the discrepancy between middle-class and lower-class minority group reading levels. Some programs deal with the details of language involved in reading. Here sociolinguistic expertise may be helpful, for there are linguistic differences between the language of the basal reader and the lower-class black child's indigenous dialect. Basic to this discussion is the fact that "Black English," "Negro Dialect," or "Negro Nonstandard English" is a fully formed linguistic system with its own grammar and pronunciation rules; it cannot be dismissed as an unworthy approximation of standard English. There are several alternatives which attempt to eliminate the effect that dialect differences may have in the acquisition of reading skills.

The Retention of Extant Materials

Teaching standard English prior to reading—Although teaching of standard English before teaching of reading may appear similar to the simultaneous teaching of reading and speaking standard English, it is essential not to confuse these procedures; when teachers "correct" children for dialect interference as well as the authentic errors that occur in learning to read, the teaching of standard English is done in an unsystematic way. But the approach suggested here first concentrates on the systematic teaching of standard English and proceeds to the teaching of reading only after spoken standard English is acquired.

There are educational psychologists who maintain that standard English is a prerequisite for reading because the child's indigenous language system may leave him cognitively handicapped. The assumption is that standard English must be taught prior to reading because the child comes to school with a deficient language system. On the other hand, teaching standard English prior to reading has been endorsed by some linguistically sophisticated educators, for different reasons.

If we were simply dealing with linguistic facts, teaching standard English prior to reading would be an attractive alternative. Children are adept at language learning, so why not teach them standard English at an early age? But linguistic advantages cannot be treated in isolation from sociocultural facts. Probably the most essential sociolinguistic point is the fact that the vernacular speech of these children has persisted despite attempts to acculturate them to standard English. Children want to speak like their peers, and conflicts between school and indigenous value systems have shown that school values will most often come out on the short end of a compromise.

Also, it may be that excessive time must be spent to produce even a mediocre performance in standard English. For example, it may take several months of drilling to get a student to consistently say *ask* where he formerly said *aks*.

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Even if we take an optimistic view on the teaching of standard English, we cannot assume that the first grade is the best time to teach it. Some sociologists and educators suggest that it is most reasonable to start at an age when there is an increasing awareness of the social consequences of using nonstandard features of speech. The social perceptions of speech stratification seem to start to match the adult norms around age 14–15.

Before we can endorse teaching standard English as a prerequisite for reading, we must have evidence that it can be extensively taught given the sociocultural facts, and that it is most effectively taught at the initial stages of education.

Dialect reading of extant materials—In the other alternative the child is given standard reading materials and asked to read them aloud in a dialect-appropriate manner. For example, if a lower-class black child reads *Jane goes to Mary's house* as *Jane go to Mary house* he is considered to have read it properly, since third person singular *s* and possessive *s* suffixial absence are part of his vernacular. By permitting the child to read the traditional materials in his own dialect, the teacher can focus on the essentials of the reading process and the child will not be confused about reading problems which may result from dialect interference and legitimate types of reading errors.

This approach assumes that the standard English contained in the materials is comprehensible to the child. Claims about the comprehension of standard English by lower-class black children vary greatly, but we lack empirical evidence on this question. The most reasonable position seems to be that the dialect speaker has a receptive competence in standard English.

To suggest that there is a basic comprehension of standard English sentences by nonstandard speakers does not preclude the possibility that some information loss may occur when reading standard English. If information loss does occur, what should be done about features which might be unfamiliar to the lower-class black child? Are these unfamiliar features sufficiently infrequent to warrant their retention, since any child can expect some unfamiliar constructions in reading material or will the unfamiliar constructions be sufficiently great to impede the reading process?

Another factor concerns orthography, particularly if the "phonics" approach is employed. Although it has been argued that the traditional orthography is inappropriate for the dialect of lower-class black children, the adequacy of traditional English orthography for speakers of a nonstandard dialect has been demonstrated. Hence we do not consider this factor a disadvantage as long as the teacher knows the type of sound symbol relations which are appropriate for the dialect.

If the student should be encouraged to read the way he speaks, this assumes that the teacher knows that dialect rendering of a given passage can be expected. If a child reads *thought* as *fought*, the teacher must know whether this is a problem of sound-symbol relations due to the incomplete mastery of these relations or a legitimate dialect rendering of *th*. In this case, the pronunciation cannot be attributed to dialect interference since there is no dialect rule which renders *th* as [f] in word initial position. But what if the student reads *Ruth* as *roof?* In this case, it may be a legitimate dialect pronunciation and should not be corrected. If this alternative is to be adopted, it will require training

of teachers in the structural pattern of the dialect.

This approach does have a practical advantage: it can be established more immediately than some of the other alternatives.

The Revision of Materials

Two approaches have been proposed. One involves elimination of features which might be unfamiliar to the nonstandard speaking child; the other involves writing of materials designed to represent the language and culture which the child brings with him when he enters school.

The neutralization of dialect differences—One method would be to eliminate features which might be problematic for the lower-class speakers because these features are not an integral part of his linguistic system. For example, the use of *be* to indicate distributive action in the sentence *He be here every day* would not be used, since this feature is unique to nonstandard black speech. Accomodation would be made only by excluding features in standard English which do not have isomorphic correspondence in the dialect. This alternative would concentrate on grammatical differences, since differences in pronunciation would involve most words in the English language.

This alternative assumes that there is a sufficient "common core" between the standard and nonstandard language system. The validity of this assumption is an empirical question, and on the basis of research, it is certain that there are many similarities between standard English and nonstandard English. But there are differences and we must ask if these might be of the sort which would make it difficult to incorporate this type of change into materials.

What would be involved if we were to eliminate certain types of constructions? It would mean that we could only realize possession via the preposition *of* or the verb *has*. For some items such as *John's hat* or *Bill's bike*, the use of *of* might be stylistically unacceptable even though grammatical, (*the hat of John, the bike of Bill*). Using *John has a hat,* or the *hat which John has* every time we wanted to indicate possession might lead to more difficulties. It seems that the only way to eliminate such stylistic unacceptability would be to avoid some potential possessive construction. Thus, a sequence of sentences such as:

John's new bike is blue. Mary's new bike is red. John's bike is bigger than Mary's.

might be restructured:

John has a new blue bike. Mary has a new bike too and it is red. The bike John has is bigger than the one Mary has.

This restructuring might alleviate problems concerning differences in the use of possessive *s*, but other patterns may emerge, such as the use of third person singular present tense *s*. The use of *has* is therefore unjustified if we are to hold to our principle. This difference eliminates virtually all stories in the present tense which use the third person singular forms. The elimination of structures calling for copulas would add a further restriction, although one might maintain that copulas can be used as long as the full form (e.g., *He is big*) and not the contracted form (e.g., *He's big*) is used, based on the conclusion that the full form of the copula is an integral part of the dialect whereas the contracted form may not be. Another difference involves the elimination of potential multiple negatives so that the sentence *He doesn't have any toys* would not be permitted. This might be remedied by using only a negative indefinite such as *You have no toys,* but this is not

feasible since the rule which transfers the negativized auxiliary to the indefinite form is not an integral part of the dialect. If one wanted to avoid constructions where black dialect might potentially use *be,* certain types of discourses involving habituality would have to be avoided, a stringent limitation if the principle is to be followed faithfully.

This shows that the feasibility of neutralization varies from feature to feature. There are some which can be handled by minor adjustments; others require elimination of significant portions of narratives or the cumbersome use of circumlocutions if the "avoidance strategy" is to be carried out rigorously.

Material developers would not necessarily have to be as rigorous in their avoidance strategy as we have described. One might avoid certain types of grammatical differences while disregarding others. For example, a decision might be made to avoid grammatical differences which involve lexical changes, while disregarding those which involve affixial forms.

There is one further aspect which may not be obvious, namely, the implicit assumption that a "dialect-free" basal reader is a legitimate end-product of this method. The pervasiveness of dialect patterns may be more extensive than anticipated. *Dialect-free* refers to the fact that features which might differentiate dialects can be eliminated. That is, readers can be made "neutral" with respect to dialect. This term should not be confused with *dialect-fair,* which refers to the adaptation of materials so that they are not biased against speakers of a given dialect. These terms are reflections of the more inclusive concepts, *culture-free* and *culture-fair.* The former is highly suspicious as an anthropologically valid concept because of the all-pervasive effect of cultural patterns of behavior (both linguistic and nonlinguistic), whereas the latter is an essential tenet of cultural relativism. With this in mind, is the effort to accommodate different dialects and cultures in one set of materials a naive attempt to achieve an unreal goal?

What are some potential advantages? For one, a modification of this method may eliminate some features of standard English which might be unfamiliar to the lower-class black child. Also, it would not incorporate socially stigmatized features of language, eliminating the controversy which surrounds the codification of nonstandard patterns in reading materials.

Dialect readers—The final alternative involves readers written in the vernacular of the children. Although dialect-specific grammatical features are incorporated in this alternative, the conventional orthographical system of English is retained for two reasons. The conventional spelling does represent the phonological units of the dialect at a more abstract level, so that, for example, there is formal justification for representing word final [*f*] in *toof* as *tooth.* From a sociological standpoint, extralinguistic matters such as other printed material and official education also make this alternative reasonable.

The proposal of dialect readers does not advocate a dualist reading system in American society. Once reading fluency has been attained and the child is confident in his ability to read, a transition from dialect to standard English readers is made.

One crucial question is the potential mismatch between the vernacular which the lower-class black child brings to the classroom and the standard English represented in the reading materials. To begin with, we must

qualify the assertion that the lower-class black child reads a dialect which is not his own and the middle-class child reads a written version of the way he speaks. Materials written for middle-class children do not always reflect the way middle-class children speak. For example, use of the verb *see* in *see the dog* is inappropriate because in the imperative, the verb *see* is generally realized by *look at*. A more consistent error is the way pronominal reference is used in beginning readers. For example, a primer which relates a narrative without recognizing the systematic use of anaphoric reference in English violates the grammatical rules of English governing the use of pronouns on a discourse level (e.g., *Jane and Dick have a dog. Jane and Dick like the dog*). Presumably, these types of divergences can be remedied.

But there is another source of mismatch, and this may be due to the fact that these styles of language have different conventional forms. Although all differences between spoken and written language cannot and should not necessarily be eliminated for the middle-class child, a lower-class black child can be expected to have a greater divergence than a white child.

To what extent should the beginning materials reflect the "pure nonstandard dialect" as opposed to the way in which children actually speak? Some of the materials which start with pure dialect may be creating a new type of mismatch between written and spoken language. That is, they have made the dialect to be more divergent from standard English in written form than it actually is in spoken form. Mismatch of this type must be minimized just as much as we minimize the difference between the mismatch of oral and written language for middle-class children learning to read.

The next assumption deals with the psychological reinforcement that such an approach might give to the child. Ideally, a program involving language familiar to the child (and an appropriate cultural setting which must be its concomitant) will hold a great opportunity for success. But if we look at attitudes as expressed by the community leaders and parents, we are faced with a sociopsychological fact which may force us to question whether we can predict psychological advantages for this program. For a number of reasons, the notion of giving children nonstandard reading materials has provoked controversy. At the heart of the rejection of dialect materials by the community seem to be attitudes toward nonstandard dialects as a medium of education. The codification of a nonstandard language system may be viewed as a threat to the social mobility of blacks. For those who are attempting to attain middle-class status it may be seen as a program which attempts to "keep the black man where he is." For middle-class leaders in the black community, some of the negative reactions may be fostered by embarrassment about the dialect or their own linguistic insecurity. Or, it may be viewed as a new type of paternalism toward the black community.

Whether the reasons for rejecting dialect readers are real or imagined, the fact remains that the sociopolitical controversy and the community's negative reactions may impede what might be an "ego-supportive" activity. The attitudes of teachers, parents, and community leaders projected to children may be sufficiently strong to affect the child's motivation.

Finally, it is assumed on the basis of vernacular learning throughout the world, that such a program can be successful. The UNESCO report on the use of vernacular languages in education recommended that every pupil

should begin formal education in his mother tongue.

There are still scholars who have reservations about vernacular reading for one reason or another—the vast expense (both in financial considerations and curricula development), the many extralinguistic factors which bias experiments comparing vernacular and national language reading, etc.

A more relevant consideration is the validity of using this procedure for different dialects as well as languages. One study appears to support the contention that this alternative may be as valid for different dialects as different languages. Other things being equal, it would be expected that the success of teaching reading initially in the vernacular in other situations would recommend its usage for lower-class black children. But the fact that the sociopsychological factor may be sufficient to impede the acquisition of reading skills cannot be ignored. In a number of bilingual situations where reading was initially taught in the vernacular, attitudes toward the indigenous language vis-a-vis the national language are quite comparable to the attitudes toward the nonstandard dialect of black children. Despite these attitudes, vernacular reading materials have been successful as a bridge to literacy in the national language.

There is obviously no magical potion for the reading ills of our ghetto schools. Whereas some alternatives seem to have more validity in terms of linguistic differences between standard English and lower-class black dialect, sociocultural or psychological factors may impede their implementation. On the other hand, alternatives which do not face these sociocultural obstacles may not adequately deal with the linguistic differences.

A first step can be the acceptance of dialect renderings of conventional reading materials. The advantage of such a step lies in the fact that it can be implemented immediately; any reading teacher familiar with the phonological and grammatical structure of the dialect can employ it. But because the differences between the dialect and reading materials are considerably greater for the lower-class black child than his middle-class counterpart, this can only be suggested as an immediate stop-gap measure.

The magnitude of the problem suggests that experiments must be made with alternatives which may involve the potential changing of materials and curricula. An experiment should be done on the effects of neutralizing potential problem areas for the nonstandard speaking child in beginning materials. Although complete neutralization may be impossible, one could make modifications based on a criterion such as the avoidance of grammatical differences involving changes in order or "free" morphemes but not "bound" morphemes such as certain suffixial forms.

It seems appropriate to recommend experimentation with dialect readers, not an extended program—only experimentation with such materials so we can find out what potential they hold for our reading programs for lower-class blacks. What must be done is to convince the community that such an alternative may hold promise for the acquisition of reading skills and to deny its experimentation may be to deny the child what should be his—the ability to read.

Sexual Dimorphism and Homosexual Gender Identity

JOHN MONEY

This paper reviews the state of knowledge regarding the genetic, fetal, hormonal, and central nervous system factors that may be related to behavioral homosexuality.

Cytogenetics: The Sex Chromosomes

The discovery that a difference between the sexes is visibly evident in cells of the body dates from 1949 when it was discovered that the sex-chromatin spot—the Barr body—is present in the nucleus of cells from female but not from male mammals. Subsequently, it was discovered that the cells of certain morphologic-appearing males, those with Klinefelter's syndrome, have a Barr body in them. The chromosome count of a phenotypic male with Klinefelter's syndrome shows him to have a supernumerary X chromosome, or in some cases, more than one supernumerary X chromosome. To the extra X chromosome is attributed responsibility for a tendency to eunuchoidism, late onset of puberty, weak pubertal virilization with possible breast development, small penis, small sterile testes, and subnormal sexual drive. The central nervous system seems to be involved with more frequent occurrence of mental deficiency and of various forms of psychopathology.

The extra X chromosome does not induce psychic femininity in all affected individuals; only the incidence of effeminacy is increased. The best way to make sense of this is to postulate a genetically determined condition of vulnerability to error in psychosexual differentiation. The period of greatest risk would appear to be during the preschool years when psychosexual differentiation chiefly is accomplished. That the differentiation of a gender identity is influenced by social experience can be clearly demonstrated in certain cases of hermaphroditism.

Other syndromes in which the sex chromosomes are implicated are the female triple-X syndrome, Turner's syndrome, and the XYY syndrome in males. Triple-X females are morphologically and psychosexually unremarkable.

Patients with Turner's syndrome are morphologic females who are dwarfed, without gonads, and subject to other birth defects. The chromosomal error is typically an absence of one of the pair of X chromosomes. Girls with this condition need hormonal replacement therapy at puberty in order to mature sexually. Psychosexually they represent the obverse of homosexuality. The girls conform to the style of femininity idealized in our culture, and are maternal in their childhood play and adult aspirations. This complete feminine gender identity may have its origins in a total absence of gonadal hormones during fetal development, so that there is no malelike hormonal effect on the sex-regulating centers of the developing brain.

The XYY syndrome has so recently been discovered that information regarding gender identity in men with this chromosomal aberration is still tentative. The condition became newsworthy after it was found to be frequent among tall, slender men in institutions for delinquents and criminals. It has been conjectured that the extra Y chromosome may have some bear-

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ing on impulsive behavior, sexual behavior included.

Nuclear sex-chromatin surveys of homosexuals and eonists have disclosed no discrepancies between them and men with normal masculine gender identity. In chromosome counting, there are no reports of discrepancies consistently related to homosexuality or to the transvestite or transsexual form of eonism, though there are sporadic combinations of homosexuality or eonism with the XXY chromosome complex of Klinefelter's syndrome. Homosexual men whose physical examination reveals no bodily abnormality have not been found to have a Barr body; nor have chromosomal errors been visualized. With techniques so far employed, there is no way of implicating an error of the chromosomes themselves in the etiology of ordinary homosexuality. Whether genes may be implicated is a different matter; there is no technique for visualizing, counting, or directly implicating certain genes in the etiology of anything. Such implication must be by inference, is rarely possible, and has not been achieved in behavior genetics.

Statistical Genetics

In *sex-ratio* studies, the male:female ratio in the sibships of male homosexuals was compared with the expected ratio of 106:100. Each study turned up a different ratio, some with and some without statistical significance, ranging from 106:100 to 125:100. The results may have no more significance than if the figures had been drawn from a random-number table. Or the results may reflect a tendency for homosexual men to have more brothers than expected. In this case, the findings may signify not a genetic predisposition, but a tendency for an effeminate gender identity to develop more easily in boys whose families have a shortage of sisters and daughters. It is provocative that a brother: sister ratio of 109:144 was found in the families of male exhibitionists.

A sample of 63 homosexuals confirmed a preponderance of brothers over sisters and showed the homosexuals to have a predominance of *ordinal position* in the lowest third of the sibship. There was a preponderance of brothers in the families of 42 fathers and 21 grandfathers, whereas 25 grandmothers and 45 mothers had a preponderance of sisters. In 44 homosexual women and 39 of their mothers and 16 maternal grandmothers, sisters predominated in the sibships with no data reported for the fathers. The homosexual women came from the upper and lower thirds of the sibship more often than the middle. Compared to exhibitionists, homosexuals tended to be born late in the sibship and of older mothers.

Another type of study is that on homosexual *twins*. There was a high degree of concordance for homosexuality in each of 37 pairs of identical monozygotic twins. The figure for fraternal dizygotic twins was different. There were 26 such pairs of twin brothers, with the index case known to be overtly homosexual; 58 percent of the dizygotic co-twins revealed no evidence of homosexual experience after the age of adolescence; the remaining 42 percent ranged over the full scale of 1 to 6 on the Kinsey homosexuality ratings. Only 11.5 percent of the co-twins were homosexual enough to get a rating as high as 5 or 6. Kinsey's corresponding percentage for ratings of 5 or 6 in the general male population was 10 percent.

A further word of caution: identical twins are not necessarily cytogenetically identical. This finding has emerged from the study of mongolism (trisomy-21) and Turner's syndrome,

when identical and apparently monozygous twins proved to be cytogenetically discordant. These findings may require a revision of concepts of genetic identity in monozygous twins, since they may be identical for all but one chromosome or one pool of genes.

Fetal Differentiation of Sexual Morphology

In the development of the embryo, nature's first choice is to differentiate a female. The anlagen of the sex organs when they first appear are identical for both sexes. The principle of differentiation is that to obtain a male, something must be added. Subtract that something, and the result will be a female. Castrate the fetus in utero prior to the critical period when sexual morphology will be differentiated, and all offspring will be born with female external genitalia. The first demonstration of this principle was by surgical castration of fetal rabbits. The same effect can be achieved by functional hormonal castration. The hormone is cyproterone acetate, an antiandrogen or androgen antagonist. Injected into the pregnant mother, it reaches the fetus and renders all its cells androgen insensitive. Those cells of a genetic male dependent on male hormone, in order to differentiate the masculine sexual morphology, then behave as if they were in a genetic female. The result is that a genetic male animal is born with the perfect facsimile of external female morphology. The gonads are testes. The uterus and fallopian tubes are absent, as in a normal male. The embryonic differentiation of these organs is not under the control of androgen; they do not develop under the influence of antiandrogen. At puberty, the testes will function in the normal male fashion. To obtain a feminizing puberty, they need to be removed or their influence counteracted by further administration of antiandrogen. Then female hormones need to be administered. Properly regulated in the female fashion, rats exhibited estrus, behaved in mating in a manner indistinguishable from normal females, and were accepted as such by normal males in the colony.

These antiandrogenized rats are an experimental counterpart of a human condition. Children born with this syndrome are a perfect female facsimile, externally, and are assigned as females. Their gonads are two testes, lacking spermatogenesis, which may be undescended or may push down toward the labia. The uterus is vestigial, making menstruation impossible. Menstrual failure or the lumps of the testes in the groins are the reason for referral. The onset of puberty is at the usual time and is feminizing, since the cells of the body are unable to respond to the normal masculine output of androgen from the testes. They respond to the normal amount of estrogen produced in a male by the testes, which is enough to produce feminization so complete as to be compatible with a career as a fashion model. The girls characteristically are tall. Some do not grow sexual or axillary hair. The nature of the resistance to androgen is unknown, but is presumed to be enzymatic. The condition is hereditary, probably a sex-linked dominant, being found in the aunts, nieces, cousins, and siblings of affected individuals. Psychosexual differentiation is feminine, with a strong degree of maternalism which makes for good adoptive motherhood.

All of this makes it clear that genetic sex alone does not exercise a direct and peremptory power over psychosexual differentiation. The genetic sex difference can express itself in psychosexual differentiation only if the intervening steps of hormonal and

morphological differentiation follow a phylogenetically prescribed course. Neural differentiation within the brain may be another necessary intervening step.

When women with androgen insensitivity marry a man, both partners are in a relationship of genetic and gonadal homosexuality. Morphologically, hormonally, and psychosexually, they are heterosexual. Legally and in the popular conscience they are heterosexual, for the evidence of common sense is that two people are homosexual not when they have the same chromosomal sex or the same sexual structures internally, but when they have the same copulatory organs externally, and a psychosexual disposition to use them in an erotic relationship together.

Genetic males who qualify as females have their counterpart in genetic females who qualify as males. This condition is found in human beings, and it can be induced in animals by injection of the pregnant mother with male sex hormone. In human beings masculinization occurs sometimes in the adrenogenital syndrome of female hermaphroditism. The source of excess fetal androgens is the baby's adrenal cortex which functions abnormally. The genital tubercle becomes a penis instead of clitoris. The skin that would have constituted the hood of the clitoris and labia minora, follows the masculine alternative of wrapping around the penis and fusing to form the urethal tube. The labioscrotal folds do not stay divided to form labia majora, but fuse in the midline to form an empty scrotum. The gonads are ovaries and remain internal. The uterus opens into a shortened vagina which opens into the urethra near the neck of the bladder, instead of having an external opening in the normal position adjacent to the urinary orifice. A masculinized sexual anatomy can be found in genetic females whose mothers were given a synthetic progestin to prevent miscarriage. Rather rarely, these hormones have an androgenic physiologic effect on the female fetus.

Some of these masculinized genetic females pass as cryptorchid males and are reared as boys. Some may escape medical attention until they are too old for a sex reannouncement. They remain living as boys and are given hormonal therapy to prevent early virilization and other symptoms associated with the adrenogenital syndrome, if they have that diagnosis. Additional surgical treatment is given to prevent the pubertal appearance of menstrual bleeding. Such boys are also given androgenic hormonal therapy to induce masculine pubertal development. So regulated surgically and hormonally, these patients differentiate a masculine psychosexual identity.

Sex Differentiation and Brain

The most up-to-the-minute knowledge concerns a sex difference in the influence of fetal hormones on the hypothalamus, which will subsequently regulate the cycles of sexual functioning in the female or their absence in the male. The basic principle is the same as that in the differentiation of genital morphology—nature's basic premise is to make a female. To make a male, something must be added—male sex hormone. When radioactive-labeled male hormone is administered to the fetus either through the mother or directly, in the case of the rat which is born immature, its uptake can be traced to various organs, including cells in the hypothalamus. When the hormone is administered within the critical period, if the fetus is a genetic female, the hypothalamic nuclei will be masculinized. These cells will never be able to release their

neurohumoral messages to the pituitary in the cyclic fashion characteristic of the female. The animal will be uncyclical, though unlike the male will likely be in constant estrus but without ovulation. Because other hypothalamic nuclei that regulate sexual behavior will have been affected by the male hormone, the animal's behavior will not conform to that of the normal female. Typically, the animal will be disoriented and disorganized in its sexual response, or will repulse the male.

The converse is found in the male that is castrated before the period when androgen should leave its imprint on the hypothalamus. Animals so treated show, when they are tested by means of an ovarian graft implanted behind the lens of the eye, that the pituitary functions cyclically, in the female fashion. The graft passes through ovarian cycles as in a normal female. In adulthood, these animals are more feminine in their responses to mounting by intact males, though they are likely to be apathetic unless primed with estrogen and progesterone or, paradoxically, with testosterone.

If the experimental interference with normal fetal development is earlier, then the morphologic differentiation of the external organs is rendered hermaphroditic and abnormal, as in extreme cases of antiandrogenization and masculinization. Rodent females exposed to androgen from this earlier stage until after birth, and not castrated, reject the male in adulthood, and display more mounting behavior toward receptive females than do normal controls. Antiandrogenized males, their testes intact, show bisexual behavior in adulthood, dependent on the sex of the partner.

Phylogenetically, it is a big leap from estrous rodents to menstrual primates. For example, in the rhesus monkey and in man, fetal exposure of the female to androgen does not predictably interfere with the pituitary's regulation of normal menstrual cycling. Provided the evidence is interpreted with caution, some inferences can be made regarding the masculinization of behavior in human females fetally exposed to androgen.

The most instructive human cases are those in which the condition was recognized at birth and hormonal and surgical corrections instituted. Under these circumstances, the possible effect of a prenatal masculinizing effect on the central nervous system is not contaminated by the postnatal effect of masculine-looking abnormal genitalia or by the persistence of incongruous hormonal functioning.

In these girls, there was a high incidence of tomboyism, as defined by themselves, their mothers, and their playmates, manifested primarily in athletic energy expenditure. Boys' toys were preferred over dolls. The rehearsal of motherhood in play was missing or low. In anticipating the future, romance and marriage were subordinated to career ambitions. Girlhood clothing and hair style showed a preference for utilitarianism rather than being chic, pretty, or fashionably feminine. There was no evidence of lesbian erotic interest—simply a low interest in boys. An unexpected finding was a high incidence of high IQs.

In the clinical study of human beings, there are no genetic males who were antiandrogenized or unandrogenized prenatally and then hormonally and surgically remasculinized for assignment at birth. The nearest approximation is agenesis of the penis which may be total, or the organ may be a microphallus with or without hypospadias. At birth, some children of this type are surgically corrected as

females. Others are assigned as males. Some few may ultimately request to be reassigned as females, but the majority accept themselves in the sex of original assignment.

In each foregoing type of case, it seems likely that there may be residual influence of the hormonal effect on the fetal brain—probably the hypothalamus, possibly the temporal lobe. But the residual effect does not dictate the postnatal differentiation of a gender identity as a homosexual. Postnatal events exercise their own power on gender identity differentiation. Nonetheless, one may make the inference that had the fetally masculinized girls been assigned and corrected as boys, they would not have had much difficulty in differentiating psychosexually as boys. The same things hold for the incompletely masculinized boys.

These findings suggest that an apparently normal baby destined to be a homosexual may have some predisposition that makes him or her more vulnerable to differentiate a psychosexual identity as a homosexual, but only if the social enviornment provides the right confluence of circumstances.

Sex Assignment and Gender Identity

None of this evidence is incompatible with evidence of an extraordinary contribution from the postnatal environment of social exposure to the differentiation of gender identity. There is no more convincing evidence than in the case of congenital hermaphrodites who are of the same diagnosis and similar degree of hermaphroditism, but are differently assigned and with a different postnatal medical and life history. It is possible to have four genetic females, each diagnosed as having the adrenogenital syndrome of female hermaphroditism: one is assigned as and reared as a boy, one as a girl, one provisionally as a boy, and one provisionally as a girl. Psychosexual differentiation takes place, respectively, in the four cases as feminine, masculine, ambivalently wanting to be changed to a girl, and ambivalently wanting to be changed to a boy. These cases indicate that the outcome in psychosexual differentiation was independent of genetic sex and of hormonal sex. The first two cases illustrate the congruence between sex of assignment and the differentiation of gender identity when the parents and other significant people are not ambivalent about the sex to which their child belongs; the second two cases illustrate what may happen when the opposite is true.

Requests for sex reassignment among hermaphrodites are the exception and requests from female to male are more common. Such requests are typically made by individuals with a large phallus who were not surgically feminized early in life, and grew up with visible evidence of ambiguity. At puberty, further masculinization is evidenced, regardless of genetic sex, because female hermaphrodites with a large, phallic-looking clitoris typically have the virilizing adrenogenital syndrome (untreated); and in males, the larger the unfinished hermaphroditic penis, the greater the chance that they will virilize at puberty.

There is a remote possibility that some few male hermaphrodites without a large phallus and not pubertally masculinized, may, if reared as a girl, feel like a lesbian who should have been a boy. Many such cases have a history of undercurrents of ambiguity in the minds of the parents as to their true sex. The preponderance of evidence from hermaphroditism points to the importance of subtleties in the sex of rearing in shaping the differentiation of gender identity as male, female, or ambivalent.

Postpubertal Hormonal Differences

The belief that childhood is a period of hormonal dormancy is open to doubt particularly in the wake of a new technique for measuring the pituitary gonadotrophic hormones that stimulate the ovaries and testes. Changes in the level of these hormones—follicle stimulating hormone (FSH) and luteinizing hormone (LH)—are detectable in advance of clinically evident puberty. Nonetheless, the chief fact of puberty is the release of sex hormones by the gonads. Males and females make some of all three sex hormones, androgen, estrogen, and progestin. The difference between the sexes is not all-or-none, but a matter of degree. Further, in biochemical structure, the sex hormones are "first cousins." The body can convert one into the other or it may retain a surplus of a hormone or its precursor which might be destroyed. For example, in males estrogen produced by the testes should be destroyed in the liver. Failure of this mechanism may be responsible for breast development in adolescent boys.

When the sex hormones were first synthesized, there was excitement concerning the relationship of the level of hormones in the blood or urine to homosexuality (male) and heterosexuality and the use of hormones in treatment of homosexuality. The excitement was doomed to disappointment. With more refined techniques, no one is interested in studies of homosexual blood and urine, since detailed studies, for example, of spermatic vein blood taken from a male transsexual at operation, indicate that there is no reason to suspect a statistical difference from hormone levels in control blood and urine.

Clinically, some homosexuals have a history of chromosomal error, sexual birth deformity, undescended testes, small penis, delayed puberty, gonodal insufficiency, poorly developed or contradictory sexual dimorphism of body build, gynecomastia (in boys) and hirsutism (in girls). But the frequency among homosexuals is sporadic. Conversely, the incidence of homosexuality in the clinical population of each of these disorders is so sporadic that one cannot entertain the hypothesis of a primary hormonal cause–effect link between the physical symptoms and homosexuality. One may interpret clinical evidence to mean that the sex-hormone levels of adulthood have little to do with the etiology of homosexuality.

The story with regard to therapy is different insofar as male hormone administered to a male or female homosexual enhances libido and leads to a probable increase in homosexual activity. Androgen is a libido-enhancing hormone for both sexes. Estrogen is a functional castrating agent in the male. It may lower the intensity of libido and lead to a decrease of sexual activity. Its therapeutic use is limited by its promotion of breast growth, which is an advantage in the case of the male transsexual who is not disturbed by having his sexual initiative reduced. In the female, estrogen appears to be more important to the cycle of nidation and gestation than to libido and eroticism, except that the unestrogenized vagina is unlubricated and painful in intercourse.

Neuroperceptual Sex Differences

Knowledge of differences between the sexes at the neuropsychologic level is fragmentary. The earliest systematic data are those from the Kinsey interviews. They point to a higher frequency of erotic (genitopelvic) arousal in the male in response to visual and narrative erotic stimuli. The frequencies varied in accordance

with the stimulus and, no doubt, in accordance with individual preference and personal history. A recent study using a specially prepared movie demonstrating sexual relations found that college women responded sexually in a fashion similar to men.

When men and women are sexually aroused by visual or narrative material, the nature of the carry-through may be different. Men are, in the popular view, more readily aroused to a casual liaison, if such is available. Women are more dependent on long-term romantic ties, especially in connection with stimulation through the tactile senses.

Men respond to a visual image—a pinup girl—as to a substitute object of sexual desire. Women may respond, but not as to an object of desire; the woman projects herself into the image and becomes the seductive one. Men do not project themselves into a picture of a man in this way. Only the homosexual man responds to pictures of other males, and then as sexual objects.

Apart from the preferred sex of the image, homosexuals do not, so far as is known, differ from other members of their morphologic sex in response to visual or narrative erotic stimulation. There is some evidence that transsexuals do not differ from members of their morphologic sex of birth in visual and narrative erotic responsivity.

Another line of evidence pertains to dreams. The Kinsey studies showed that 37 percent of women reported orgasm dreams, whereas 83 percent of men did. In women, dreams culminating in orgasm occurred with greatest frequency between the ages of 30 and 50, in men during the postpubertal teens and the 20s. On the basis of anecdotal impression, a similar difference holds up in a comparison of homosexual women and men.

Perceptual distractibility shows a sex difference. The male is fairly promiscuously distractible from one love object to another, except perhaps when desperately in love. The female is more steadfastly tied to a single romantic object or concept. In the act of copulation, the male has a singleness of purpose, and is likely to be unable to continue if successfully distracted by a competing stimulus. The male's arousal by perceiving a new erotic stimulus perhaps relates to his greater expenditure of energy in sexual searching, pursuit, and consummation. Expenditure extends also to adventurous roaming, to assertiveness and aggression, and to the defense of territorial rights.

There is no systematic evidence concerning homosexuals and their ratings on distractibility and energy expenditure. Students of homosexuality probably agree that male and female homosexuals are not different from ordinary males and females regarding distractibility. In energy expenditure, there is possibly a difference with regard to aggression and territorial rights, insofar as female-identifying homosexual males are persecuted by their age-mates in childhood because they do not fight for a position in the pecking order. The relationship of this nonbelligerency to the nervous system is conjectural.

The sense of smell is characterized by a sex difference which is hormone controlled. Smell acuity, at least for some compounds, appears to be regulated by estrogen level. Women generally have greater acuity than men. There may be exceptions, but acuity is at its peak for most women when they are not in their progestin phase. Their acuity is lost after ovariectomy, but regained if they are given estrogen. In male rats, estradiol will suppress acuity completely. Castration will

lessen, but not abolish, an adult male rat's capacity to distinguish the estrous female from the diestrous; male juveniles have a little of this discriminatory ability. Surgical removal of the pituitary gland suppresses ovarian function and brings about loss of the sense of smell. There is a rare clinical syndrome, more frequent in males, in which congenital absence of the sense of smell is a pathognomonic sign, along with hypogonadism and sterility. Whether these data have any bearing on homosexuality is not known. One possibility pertains to neonatal life and early childhood. Perhaps human sex differences in the sense of smell are in evidence at the age when, in some lower mammals, smell is the mechanism for bonding the mother-child relationship. A neural impairment in the baby's sense of smell, or in the mothers' stimulus or even in the father's stimulus, might perhaps lead to an error in psychosexual differentiation.

The sex-difference effect of vocal sound in the neonatal and early childhood period might also be looked into, and the sense of touch as experienced in rocking, patting, stroking, cuddling, clinging, and nestling.

Brain and Dimorphism of Gender Identity

The differentiation of one gender identity instead of the other may follow a paradigm not unlike that of internal sexual morphology. Two separate anatomic systems exist, both of which are intact early in embryonic development. Under hormonal influence, one system proliferates into the functional organs of one sex, and the other regresses to a vestigial state. The correct balance is not always maintained, as in the sexual ambiguity of hermaphroditism. An analogous ambiguity in psychosexual differentiation might result in sexual deviations such as homosexuality, transvestism, or more rarely, transsexualism. In the world of a child, male and female systems of behavior exist as models, carrying a positive or negative valence according to the sex of the child's rearing. The child becomes conditioned to adhere to the positive model, that is, the one congruous with his rearing which, in the normal course of events, is congruous with his anatomy. There are some children who encounter difficulty with the positive model and a correct gender identity. The signs may be manifested as young as the age of 3. For most children, positive and negative are clearly distinguishable. The model belonging to the other sex takes on a negative valence and is a reminder of how *not* to act. With its negative valence this opposite-sex model does exist in the brain as a neurocognitional entity. For those individuals destined to be heterosexual and incapable of homosexual acts, the negative valence will be incapable of lifting. For others the negative valence may never become properly established. These are individuals who trace their homosexuality as far back as they can remember. For other individuals, the negative valence may be unstable so that the opposite-sex model of gender identity may, under special circumstances, become operational. These circumstances may be developmental or in response to a traumatic emotional event. They may be the product of brain pathology; homosexuality or sexual pathology may appear in cases of deteriorative or senile brain disease. There could conceivably be special circumstances which would induce homosexuality in human beings. These are the circumstances in which some people are able to temporize with homosexuality while heterosexually deprived, or for purposes of financial gain.

Investigation of the origin and reg-

ulation of the activating and inhibiting mechanisms in the hypothalamus and elsewhere in the human brain remains to be undertaken. It may be found that a theory of neural inhibition can be extended to include a faulty postnatal inhibitory mechanism in homosexuals which allows opposite-sex behavior patterns, including those built up through social learning, to be activated.

The operational existence of the two sex models is evident in some cases of transsexual homosexualism. In what are probably rare cases, the models may be activated in alternating episodes of short duration. Each is identified by a separate name, as in one case, Marylou and Robert. Marylou went into a staring trance when she was questioned about Robert's sex-reassignment operation, which was taboo for her. From the trance Robert emerged, with his deep-pitched voice and down-to-earth ways. Marylou was coy and demure. She was gradually taking over. Robert believed that she would displace him completely.

Many transsexual homosexuals claim that they have had only one personality, the feminine one, for as long as they can remember. Occasionally, one has the chance to follow a transsexual over the years. There was one patient in whom the feminine personality appeared episodically at first, and not when the patient was dressed in boys' clothes which was, by family edict, most of the time. Over a period of 3 years, Kelvin, phased out as Kathryn, was then old enough to be independent of family, and established herself on a full-time basis, sure that she would get surgically transformed. Kathryn had a different speaking voice, more high-pitched and with a minimal lisp. She was also different in demeanor, being more languid and tender in nature.

There are reports that, occasionally, a change of personality toward transvestism may have its onset in conjunction with the development of temporal lobe seizures. In one case, the change was reversed by a temporal lobectomy which got rid of both the seizures and the transvestism. This case is a reminder that in the absence of seizures, one does not know anything of the neurophysiology of the phenomenon of multiple personality, or of the emergence of an alternate personality, as in transsexualism, transvestism, or other manifestations of homosexuality. It is there in the developmental neurophysiology and neuropsychology of behavior that the answer will one day be found.

Mental Health and the Law

The Psychiatrist in a Superior Court Setting

Eugene J. Balcanoff

In 1957 and 1958, the chief probation officer of the Suffolk Superior Court Probation Department made informal inquiries of the Director of Court Clinics in Massachusetts regarding the acquisition of psychiatric services. The Chief Justice in a letter to the Commissioner of Mental Health in 1958, authorized me to work with the Probation Department of Suffolk Superior Court.

Philosophy of the Court Clinics

It has been the philosophy of the Court Clinics that a psychiatrist working in a court setting must be a professional whom the Court and the Probation Department can accept as a colleague. He needs to recognize that the offenders referred to him are under the authority of the Court and that he is assisting the Court. It is the responsibility of the Court Psychiatrist to evaluate all cases referred and to submit a report on each case—this report becoming a part of the probation officer's file. Only the psychiatrist may decide who will be taken into therapy.

Operation of the Suffolk Superior Court Clinic

In its first fiscal year of operation the Court Clinic examined 39 cases. These referrals came from a variety of sources: District Attorney's Office; the Court; but mostly from the Probation Department itself. The majority were instances where defendants were on probation or were evaluated prior to disposition by the Court. For the first few years, the doctor was learning about how the probation office, the D.A.'s office, the Clerk of Court's office, the defense attorneys function. This period was also spent getting acquainted with the professionals involved with the court, who, in turn, were trying to understand how the psychiatrist functioned.

Between the 3rd and 5th year there was increasing acceptance by the departments other than probation. Although some probation officers were increasingly accepting of the psychiatrist, others showed anxiety and resistance. Challenges among probation officers came in the form of questions like: "Who has he helped anyway?"; "He's just a quack"; "He won't be satisfied until he puts on the robes."

There were more subtle resistances. Patient-probationers, followed either in long-term evaluation or treatment, discovered that the doctor was not their probation officer. The probation officer, in checking with the probationer-patient regarding this behavior in the community, had focused on the doctor's appointments as the most critical part of the probationer's stay in the community. One probationer was in treatment with the psychiatrist for over a year before he was aware that his therapist was not his probation officer.

Fiscal year 1962–63 was probably the turning point in terms of the psychiatrist's acceptance. For the first time several pretrial referrals were requested with a question as to the diagnosis as well as a question of the ability of the defendant to stand trial.

In that same year, two senior jus-

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tices who sat through six months in the first criminal session, where all defendants enter an initial appearance and plea, agreed that no defendant who appeared before them should be sent to the Bridgewater State Hospital for the Criminally Insane unless he was first examined by the court psychiatrist.

If one case were to be singled out as the turning point, it was that of a young female accused of pushing her two children out of a 9th-story window. She was studied at length by a mental hospital. Although finding her competent to stand trial, their report went to great lengths not to label her "psychotic" (schizophrenic). Partly because of their unclear diagnosis, and partly because the presiding justice wanted another opinion, she was referred to the court psychiatrist. Following a review of the hospital reports, a discussion was held with the clinical director of the hospital. The patient was interviewed at the jail. The diagnosis appeared to be that of a schizophrenic whose acts were symptomatic of attempts of the ego to prevent severe regression and disorganization. Moments before the tragedy she stated, "I looked into the mirror and saw myself, but it wasn't me." The presiding judge found the defendant to be not guilty by reason of insanity, and committed her to the mental hospital.

This case was interesting, not only in terms of its Medean-like tragedy, but of the legal issues. It was the first time that this psychiatrist had testified in court and one of the rare times when the question of criminal responsibility was raised. In the process of organizing the material there were informal discussions with the district attorney, with the defense attorneys, and finally, a great deal of assistance from the Clerk of Courts office in interpreting the cases on which Massachusetts law regarding criminal responsibility is based. In addition, visits to the jail helped the psychiatrist to become better acquainted with the jail personnel. The medical personnel there also became known to him because there was agitation on the part of the patient following her second interview in which attention was focused on how she reacted during the tragedy. This agitation necessitated discussions with the nurse, structuring her activities within the jail, placing her on tranquilizers, and seeing her for a third interview.

In the same year there was first-time testimony, which concerned a case of a man accused of physically assaulting and robbing his victim. Because he was mentally ill, the question of competency to stand trial became an issue. At a hearing the court clinic psychiatrist testified to clarify why, despite this defendant's mental illness, his reality testing was such that he understood the nature of the proceedings against him, his position regarding these proceedings, and had ability to cooperate with his attorney in his defense.

The Suffolk County Jail, as it began to accept this examiner, requested assistance in management of five pretrial cases. Two were questions of suicidal intentions and three others were behavioral problems. One was hospitalized for observation, and the others were placed on tranquillizers and an effort made to move their trial dates forward.

In the 7th year the Boston University Law-Medicine Institute assigned a Fellow, part-time, to the court clinic. At this time there was some movement in another direction. Pretrial cases continued to increase gradually, but referrals from the probation department were declining, partly because

the psychiatrist's case load was such that referrals were not actively sought.

Up to this point, several sexual offenders had been referred. The majority were homosexuals involved in perverse behavior or were men who exposed themselves. On occasion, they were men in midlife whose offenses with adolescent girls were symptoms of depressive episodes. There were a few who committed sadistic or aggressive sexual acts, such as assault and battery with intent to rape, sodomy of boys in their latency, or attempted or actual rape of young female children. The questions asked after a finding of guilt, were questions of treatability and the dangerousness of the offender. Two cases of sexual offenders found guilty of aggressive acts were referred for the purpose of determining whether they came within the definition of a sexually dangerous person as defined by Massachusetts Law. One had been studied by the treatment center at Bridgewater (set up to evaluate potentially sexually dangerous persons as well as to treat those who have been so found by the court). The reason for the court psychiatrist's involvement was the request by the defense counsel and, in one instance, by the defendant himself. This necessitated a review of all records on the offender prior to his evaluation interviews, along with a written report, and preparation for testimony which could be open to challenge in court. The first case did not require testimony since the issues were clearcut; the treatment center and court psychiatrist agreed that the man was sexually dangerous. The second referral was challenged in court.

In all the testimony the Clerk of the Superior Court and the Chief Justice have been helpful in educating this psychiatrist as to how his testimony could be improved. The presiding justices have furnished the testifying doctor with transcripts of his testimony so that it could be studied for ways of improving the technique of testifying.

By the 9th year, the evaluation number had increased to 143. The pretrial referrals also were on an increase and constituted well over 50 percent of all cases referred for an evaluation. Traditionally, pretrial cases are referred for an evaluation as to the ability of the patient-defendant to stand trial along with the determination of mental illness. There was evidence that the justices and defense attorneys were more concerned about rendering an evaluation in such a way that could be valuable to the presiding justice when it came time for disposition. The majority of cases awaiting trial were evaluated at the jail. At the suggestion of the Fellow from the Law-Medicine Institute, these cases were "habed" up from the jail and examined at the "dock" (the lock-up where defendants going to trial without bail are held for their court appearance). Around this time the officers in charge of the Superior Court Dock called the physician for a medical emergency. A defendant was having repeated grand mal seizures. The doctor informed the court that this defendant was unable to stand trial and needed hospitalization. The court dismissed the charges on condition that he be hospitalized, which he was. As important as this was to the particular patient-defendant, it opened another door in the complex building of the court family home. The officers in charge of the dock in gratitude for aiding them in this medical emergency, had one of the cells turned into a pleasant, small interview room so that the psychiatrist could have more privacy in his examina-

tions. Other less dramatic emergencies have arisen.

In the 10th year, the services of a psychiatric social worker were added. This worker was on loan from the central office of the Division of Legal Medicine. In addition to his degree in psychiatric social work, he had a law degree, and it was this dimension that the court clinic began to exploit. This has added a new depth and dimension of understanding the reasons for pretrial referral. The pretrial referrals have continued to be a large percentage of the cases. In 1967, an analysis of 30 pretrial cases indicated that approximately 50 percent were referred by the justices and by defense attorneys privately employed, and by the defense attorneys of indigent clients. On occasion the district attorneys have referred pretrial cases. All of these do not reflect the fact that informal conferences with defense attorneys and district attorneys have become a frequent occurrence in the corridors. This experience has taught the psychiatrist how to differentiate between the attorneys who are clear as to why they are referring a case, the attorneys who might be referring cases primarily for strategic purposes, or the attorneys who need assistance in clarifying the reasons for referral.

Psychiatric treatment in a Superior Court setting is different from the district courts. The Superior Court Clinic sees offenders who have been charged with serious crimes and the recidivists of major crimes. The number of cases in treatment varies, but is approximately 20 cases a year (seen from 12 to 30 interviews). The treatment case load is probably not as high as in juvenile and district courts.

Despite the relatively low number of treatment cases, the Clinic is seen as treatment oriented, not only by the court family and the defense attorneys, but by the defendants. We have been impressed by the large number of defendants at the pretrial level who are eager to talk about what motivated them to become involved with the law—even before the days of privileged communication regarding the alleged crime. This eagerness to talk reflects a number of factors. It reflects the reputation for integrity that the court psychiatrist has by way of the court, defense attorneys, district attorneys, and prior defendants. It also reflects one of the goals of the Clinic—that any evaluation interview is a therapeutic encounter. Regardless of the legal questions of innocence or guilt, we have confronted defendants on some of the major conflicts that have led to their destructive behavior. What has been picked up by the majority of defendants is the fact that the psychiatrist is not sitting in moral judgment, is *actively* interested, and will not reveal material that might prejudice his case. This active listening coupled with a sensitive balance between empathy and objectivity has not only been of value to defendants, but to the whole court family. It has enabled us to deal effectively with the anxieties of the defendants as well as those of the judges and attorneys.

Mental Health News Digests

National Media Awards

Since 1956 the American Psychological Foundation has made an annual award "to recognize and encourage sound and accurate reporting of psychological information in the mass media outside of textbooks and professional journals." Beginning in 1971 the number of awards will be increased to three annually; one will be to the author of the best book or monograph; another to the director of the best audiovisual presentation—television show, radio show, or movie; and the third to the outstanding newspaper or magazine writer. Three awards will not necessarily be given each year; they will be made only if the material warrants it. The Awards have a cash prize of $500 and a citation. Further information about them may be obtained from the Department of Public Affairs, APA, 1200 17th St. N.W., Washington, D.C. 20036. (Adapted from the *APA Monitor*, February 1971)

Dependence Liability of Non-Narcotic Drugs

A 112-page Supplement to Volume 43 of the *Bulletin of the World Health Organization* is concerned with the "dependence liability of non-narcotic drugs." The authors are H. Isbell, Professor of Medicine and Pharmacology at the University of Kentucky Medical Center, and T. L. Chrusciel, Medical Officer, Drug Dependence, Division of Pharmacology and Toxicology, World Health Organization.

As stated in the Introduction, "This publication was prepared because of the increasing concern that is felt in many responsible quarters about the self-administration of a number of psychoactive substances in order to experience their psychic effects. It presents technical data on 253 psychoactive drugs and herbs considered to have an actual or potential capacity to produce central nervous system stimulation, depression, or hallucinations or to produce distortions in perception, thinking or judgement and that may induce drug dependence. Substances of the types already under international narcotics' control (opioids, coca leaves, cocaine and cannabis plants) are not included. . . ."

Copies may be obtained for $2.00 each from the American Public Health Association, Inc., 1740 Broadway, New York, N. Y. 10019.

Conference on Aging

The Care of Old People—Designing the Humane Environment will be the theme of the Institute of Gerontology's 24th Annual Conference on Aging, to be held June 7-9 at the University of Michigan in Ann Arbor. The conference will assess American attitudes toward the care of old people. It will scrutinize current systems for delivering services to the old, and it will explore environmental designs for living the later years with utmost dignity, comfort, and security.

The topics to be discussed include the roles of nursing homes, homes for the aged, and mental institutions; alternatives to institutional care; financing care of the old; legal problems facing people in their old age; the priority issues confronting public and private organizations; and responsibility for developing the humane environment. Among those invited to participate are legislators and government officials, medical personnel, religious leaders, community planners, behavioral scientists, lawyers, architects, social workers, housing administrators, social security and health insurance

specialists, and older people themselves.

Information may be obtained from Woodrow W. Hunter, Conference Co-Director, Institute of Gerontology, 1021 E. Huron St., Ann Arbor, Mich. 48104.

APA Task Force on Automation and Data Processing

Task Force Report No. 3, prepared by the American Psychiatric Association's Task Force on Automation and Data Processing is now available. Concerning this report, Dr. Melvin Sabshin, Chairman of the APA Council on Research and Development has stated, "Computers could become a potential threat to the trust that patients and psychiatrists must share in order to work together. On the other hand, computers can also catalyze a renaissance in psychiatry as a science and in the delivery of mental health care that truly staggers the imagination. Can psychiatry somehow enjoy the benefits, but avoid the pitfalls of this awesome technology? Yes, if psychiatrists attempt to understand it and control its application. But the task of gaining this understanding has been almost impossible. Engineers (particularly electronic engineers) and psychiatrists rarely speak the same language. The APA Task Force on Automation and Data Processing—composed of psychiatrists—was assigned the job of helping to bridge this communication gap."

Copies may be obtained for $3.00 each (bulk prices on request) from PSD, American Psychiatric Association, 1700 18th St. N.W., Washington, D.C. 20009.

Differential Utilization of Outpatient Psychiatric Services by White and Non-Whites, 1969

The age-adjusted admission rates to outpatient psychiatric services for non-whites in 1969 are about 30 percent higher than the corresponding rates for whites. For males, the non-white rate exceeds the white rate by 23 percent.

Non-whites utilizing outpatient services are older on the average than whites for both males and females.

The number of female admissions exceeded the number of male admissions in each age-color group with the following exceptions: (1) for those under 18 years of age, male admissions exceeded female admissions for both whites and non-whites and (2) for non-white admissions in the age group 35–44, the number of male and female admissions was about equal.

These are some of the conclusions in a recent Statistical Note prepared by the Survey and Reports Section of NIMH's Biometry Branch. The report also gives differences in admission rate for selected diagnoses and the resultant differences in the diagnostic distribution of admissions by age, sex, and color.

The data are based on a sample survey of admissions to outpatient psychiatric services conducted in late 1969 in cooperation with the State mental health authorities. Copies of "Statistical Note No. 36" may be obtained from the Biometry Branch, NIMH, 5454 Wisconsin Ave., Chevy Chase, Md. 20015.

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